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(Citation)

GSICS Working Paper Series, 28

(Issue Date)

2014-01

(Resource Type)

technical report

(Version)

Version of Record

(URL)

<https://hdl.handle.net/20.500.14094/81006881>



GSICS Working Paper Series

# **Entrepreneurship, Government Policy and Performance of SMEs in Laos**

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No. 28

January 2014



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# **Entrepreneurship, Government Policy and Performance of SMEs in Laos**

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## **Abstract**

The study evaluates the performance of SMEs in Laos in light of entrepreneurs' capacity, government facilitation, and characteristics of firms and customers using firm-level data. Reflecting ability and experiences of owner/manager, her age and practical education and the use of modern equipment (personal computers) are among the most important factors contributing to firm performance. Knowledge on legal framework related to business and membership in business associations are also found to be helpful in SMEs' performance. Domestic firms are inferior to foreign-owned enterprises, while limited enterprises are leading others. Firms in various locations show comparable performance. On the other hand, government facilitation and customer characteristics do not appear to have any impact on firm performance.

The findings imply the need for effective SME promotion policies and related policies, such as enhancing the effectiveness of education, both formal education and vocational/technical training; improving the dissemination and enforcement of laws and regulations related to business; and attracting more FDI and efficient foreign enterprises.

**Key words:** *entrepreneurship, human capital, SME, Laos*

**JEL Classification:** *C25, L25, R30*

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## **1. Introduction**

It is well recognized that the private sector plays an important role in socio-economic development. Its vibrant enterprises, in a huge number, offer job opportunities and income to the labor force, create goods and services to improve people's lives, help reduce poverty and stimulate industrialization in developing economies. Yet, for the transitional economy of Laos, it was not very long ago that the private sector with small and medium enterprises (SMEs) as the core started to evolve and play a crucial role in the development process, and that its role has been recognized.

Along with the adoption of an open-door policy in the late 1980s, the Government of Laos (GOL) has explicitly recognized the role and promoted the development of the private sector. In the National Growth and Poverty Eradication Strategies (NGPES) private sector development (PSD), trade development and foreign direct investment (FDI) were given priority attention and expected to be the driving factors of growth. Policy measures and action plans for SME development were also outlined in the government strategies (Lao PDR, 2005). In particular, the Action Plan for SME promotion encompasses establishment of enabling environment, enhancement of competitiveness, improvement of access to finance and markets, promotion of entrepreneurship (entrepreneurial attitude) and the like (Onphanhdala and Suruga, 2010a).

The Lao economy is characterized by the agricultural dependency and dominance of SMEs in the non-agricultural sectors. A decade ago, the number of small enterprises was recorded at 25,271 and that of medium enterprises 772, and together they generated more than 60,000 jobs (Kyophilavong, 2007). To date, achieving a share of more than 96% in number and 54% in employment (GIZ, 2012, p. 47), SMEs have proved their significant contribution to economic development and industrialization of the country. They tend to concentrate in food processing, trade, production of apparels; construction materials; and wooden furniture, and providing services in tourism; education; transportation; and internet (information and communication technology, ICT). Nearly three-thirds are family-owned enterprises (Southiseng and Walsh, 2010).

Notwithstanding the important role of SMEs in the economy, studies on the development entrepreneurship and performance of SMEs in Laos are by far inadequate, especially quantitative assessments of impacts of entrepreneur's skills and ability, firm- and business-related factors, and government policies on firm performance are very limited in both number and scope. As the private sector is relatively young and SME promotion is at an

early stage of development, efforts made to examine the development of SMEs and to evaluate government promotion policies are still restricted, while many of the published studies are of qualitative nature or based on field surveys with a small sample size (Shouthiseng et al., 2007; Souksavath et al., 2012). Kyophilavong (2007) addresses issues of SME development in Laos as a consequence of trade liberalization and FDI in four aspects (innovativeness, market expansion, competitiveness and networking) with an emphasis on the garment industry. The study reveals that Lao garment SMEs are indeed competitive thanks to lower wage rates, but face difficulties in innovativeness, market expansion and access to finance without receiving any assistance from GOL. It is suggested that the government would need specific support programs to make its sound policies more effective and that reliable statistical information on SMEs is indispensable for formulation and management of effective policies. Similarly, in a cross-country study of five ASEAN economies<sup>2</sup> a positive effect of international trade on job creation in micro and small enterprises (MSEs) has been found, and policies promoting participation of MSEs in external trade are deemed beneficial for economic development (Krueger, 2013).

A lateral approach is to study Lao SMEs along with their counterparts in neighboring countries to draw relevant lessons from abroad. In a research on SMEs in Cambodia, Laos and Vietnam (CLV countries), firms are classified into four groups: supporting industries, export-oriented industries, domestic market-oriented industries, and cottage industries. It is revealed that a common characteristic of Lao SMEs in supporting industries is the interconnectedness with multinational corporations (MNCs) in Thailand and Japan. The resulting policy recommendation emphasizes financial issues of SMEs (Uchikawa and Keola, 2008).

In literature, issues of SME promotion and development are often addressed in close relationship with entrepreneurship. The latter has been recognized as a significant channel for economic growth and development. At the individual level, entrepreneurship is a characteristic embodied in entrepreneurs' mind that helps establish businesses, generate employment, create new products and services, stimulate innovation, and improve welfare. However, for least developed countries and developing economies, knowledge on entrepreneurship and its contribution to economic development is all but insufficient, mainly due to lack of entrepreneurship studies and statistical data in such economies (Shane and Venkataraman, 2000; Acs et al., 2008; Naude, 2010).

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<sup>2</sup> The five countries included in the analysis are Malaysia, Thailand, Indonesia, Laos, the Philippines, and Vietnam.

On the other hand, owing to increased availability of statistical data the recent period has seen an increase in empirical studies on SME development and entrepreneurship for developing economies, such as Pakistan (Kurosaki and Khan, 2004), Laos (Onphanhdala and Suruga, 2010a), and Vietnam (King-Kauanui et al., 2006; Santarelli and Tran, 2013; Vixathep, 2013). In such studies, entrepreneur's 'human capital' is often represented by education or experience/skills of the owner/manager, while the 'performance' of an entrepreneur is evaluated indirectly by the success of the firm she manages. It is common to find a positive relationship between education and firm performance, while the degree of success and the appropriateness of education levels may vary across firm sizes and countries.

Turning to Laos, in supporting the ongoing PSD and enterprise development some donors have made efforts to collect data and established databases of enterprises. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ<sup>3</sup>) has completed four enterprise surveys (2006, 2008, 2010, 2012), while the World Bank has conducted a series of three enterprise surveys (2006, 2009, 2012). Although the content and quality of the data are considered as a barrier for quantitative analysis in many cases, they are, to our knowledge, the most comprehensive databases on enterprises in Laos.

In view of enhancing the understanding about the value of the private sector in the Lao economy, the present paper attempts to provide some discussion on entrepreneurship and SME policies based on a quantitative analysis using data from the 2009 enterprise survey of GIZ. The main objective of the study is to evaluate the performance of entrepreneurs, especially the role of human capital, in small and medium enterprises and the effectiveness of SME-related government facilitation programs. Other factors, such as characteristics of firms and customers, are taken into consideration as well. In line with the mainstream entrepreneurship studies, in this paper an 'entrepreneur' is understood as someone who establishes any business or manages the day-to-day activities of a business, i.e. the owner or manager of an enterprise.

The paper is organized in five sections. Following a brief introduction and literature review in the first part, Section 2 discusses the role and reviews recent development of SMEs in Laos. Conceptual consideration, an econometric model and data for analysis are described in Section 3. Section 4 discusses the empirical results and findings. Finally, conclusions and policy implications are provided in Section 5.

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<sup>3</sup> GIZ is the German abbreviation for the German International Cooperation Agency (formerly known as Deutsche Gesellschaft für Technische Zusammenarbeit or GTZ).

## 2. Small and Medium Enterprises in the Lao Economy

### *Legal support for SMEs*

Upon the independence in 1975 and the adoption of the centrally planned economic system the word “SME” was not explicitly used until the implementation of the transition policy, widely known as the New Economic Mechanism (NEM or *Chintanakanmai*). In the first half of the 1990s, GOL enacted and promulgated a series of economic laws and administrative decrees aimed at making private enterprises the engine of growth. In particular, the Enterprise Law promulgated in 1994 made the establishment of a private SME a legal entity. In order to reduce business barriers and administrative costs, this law was replaced by the Business Law in 2006 (Uchikawa and Keola, 2008; Souksavath et al., 2012).

The promotion of SME development received more legal support when the “Decree on the Promotion and Development of Small and Medium Sized Enterprises,” the Decree No. 42/PM, was enacted on 20 April 2004. Subsequently, the Small and Medium Sized Enterprise Promotion and Development Office (SMEPDO) was established in the Ministry of Industry and Commerce<sup>4</sup>. In addition, the Small and Medium Sized Enterprise Promotion and Development Committee (SMEPDC) was established based on the Prime Minister’s Decision No. 23/PM, dated 8 March 2005. The SMEPDC, chaired by the Minister of Industry and Commerce, consists of 25 members representing both the public and private sectors. The Committee represents the government body, which is responsible for SME-related tasks at the central level and directly provides advice on issues related to promotion and development of SMEs to the GOL (SMEPDO, 2011).

### *Definition of SMEs*

SME definitions typically differ across countries and industries<sup>5</sup>. In Laos, the SME definition was formulated and went through some modifications over the last decades. Around the mid-1990s the Ministry of Industry and Handicraft and the GTZ classified SMEs by the number of employees (1-9 workers: small, 10-29 workers: medium, and 30 and above:

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<sup>4</sup> The former name of the Ministry is “The Ministry of Industry and Handicraft”.

<sup>5</sup> If we confine ourselves to the definition using the number of workers the definition is diverse across sectors and countries. For example, in Japan SME is defined as the one with 300 workers or fewer in manufacturing, 100 or less in wholesale and service, and 50 or less in retail sector. In manufacturing, SME is defined as the enterprise with up to 500 workers in the US, less than 250 in the EU, up to 300 in South Korea, 200 or less in Thailand, 150 or less in Malaysia, not more than 300 in Vietnam, up to 2000 in China. Usually the value of sales and/or registered capital is added to define it.

large). In 2000, these labor thresholds were modified and the horsepower was also added to the definition (Kyophilavong, 2007).

Currently, small and medium enterprises are defined in Article 2 of the Prime Minister's Decree No. 42/PM based on three criteria, namely number of employees; total assets; and annual turnover: (1) Small enterprises are those employing up to 19 employees, or having total assets not exceeding 250 million LAK<sup>6</sup>, or gaining an annual turnover not exceeding 450 million LAK; and (2) Medium enterprise are those employing 20 to 99 employees, or having total assets not exceeding 1,200 million LAK, or gaining an annual turnover not exceeding 1,000 million LAK (PMO, 2004).

### *Role and development of SMEs*

Small and medium enterprises are recognized as one of the most important players in the economy regardless of the size of the economy. Even in a huge economy, take for example Japan, “large enterprises” and “SMEs” have always been coexisting in the so-called “dual structure.” SMEs are often affiliated with and/or work as subcontractors or suppliers for large assembly firms in a vertical production network. Previously, SMEs were perceived as less efficient, having low technological and skill level, and temporary employment, etc. However, the image of SMEs has gradually changed as they have contributed significantly to Japanese industrialization. With their huge number they have provided employment opportunities to a large portion of the labor force, created various industrial agglomerations, and enabled regional development, just to name some (Ito, 1992).

In a global context of developing countries, SMEs are considered as the backbone of the private sector that has potential for rapid growth in employment, income generation and poverty reduction (IFC, 2011). In a discussion on the role of SMEs in economic growth, it is argued that the contribution of small firms to an economy is related to higher growth, but might not be pro-poor. Active and vibrant private enterprises can help enhance the effectiveness of aid projects in developing countries. Moreover, in a proposed SME development framework it is maintained that successful entrepreneurship development relies on sound business culture, education, skills and availability of capital. A firm's development process passes through three different stages from idea stages, to breakthrough stage and to growth stage, in which businesses develop from the initial stage of “will to start” to an

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<sup>6</sup> LAK stands for Lao Kip (the currency of Laos).

intermediate stage of “will to prevail” and finally to a sustainable stage of “will to grow” (Agbeibor, 2006).

In a regional context, Hiratsuka et al. (2008) illustrates a concept of “industrialization through vertical production network” for CMLV <sup>7</sup>, in which economic peripheries (unindustrialized economies) with a small domestic market can achieve industrialization by means of a vertical integration into a production network of a core (industrialized economies). During this process unindustrialized countries can enjoy comparative advantage resulting from lower wage rates, but have to improve institutional matters (import-export procedures, for example). Also, transportation costs would decline along with the integration process.

In the Lao context, the majority of establishments, particularly in the industrial sector, belong to the SME category. They account for more than 95% of enterprises in terms of number and employ around 100,000 workers of about 2.7 million in the labor force (Table 1; Souksavath et al., 2012). Many SMEs in supporting industries and export-oriented industries have developed as part of a transnational production network or have been established by means of FDI, such as garment firms. Many of the foreign owned SMEs (wholly or partly) would eventually grow and develop themselves to large enterprises.

Table 1: Number, production and labor of enterprises in Laos

| No. | Description                     | 2002   | 2003   | 2004    | 2005    |
|-----|---------------------------------|--------|--------|---------|---------|
| 1   | Number of enterprises           | 24,742 | 25,607 | 26,200  | 23,420  |
|     | Large sized enterprises         | 112    | 119    | 207     | 144     |
|     | Medium sized enterprises        | 604    | 614    | 722     | 775     |
|     | Small sized enterprises         | 24,026 | 24,874 | 25,271  | 22,501  |
| 2   | Production value ('billion Kip) | 1,423  | 2,314  | 2,911   | N.A.    |
| 3   | Labor                           | 91,034 | 98,557 | 103,021 | 101,945 |

Source: Ministry of Industry and Commerce, Lao PDR

On the other hand, the majority of domestic market-oriented establishments are SMEs which are often founded in cities having a relatively large population and sharing border with Thailand or Vietnam, such as the Vientiane Capital City, Savannakhet Province, Champasack, Khammuan, Xayabury, Xiengkhuang, and Vientiane Province. For instance, most of SMEs in cottage industries are family business and groups of villagers producing and selling handicrafts to retail shops, and the like. These middlemen (shop owners) would directly resell the products, or modify the fashions, or distribute them to domestic and foreign markets. One remarkable development event of enterprises of this type was the “One Village One Product” movement initiated by the Japan International Cooperation Agency (JICA) in 2002. The Lao

<sup>7</sup> CLMV refers to four new ASEAN member countries: Cambodia, Laos, Myanmar and Vietnam.

version of this movement is the “One District One Product” (ODOP) movement. One major problem faced by SMEs in this category is the lack of information and coordination (Uchikawa and Keola, 2008). In addition to the asymmetric information issue, challenges facing SMEs in Laos include business climates (tax issues, red tapes, etc.), limited access to financial sources, and lack of labor skills (Onphanhdala and Suruga, 2010b; Southiseng and Walsh, 2010; Souksavath et al., 2012). Especially, enabling broader access to sources of finance and strengthening education and skill training for workers would enhance firm performance, attract more FDI, accelerate economic growth and reduce poverty (Onphanhdala and Suruga, 2010b; IFC, 2011).

### 3. Econometric Model and Data

#### 3.1. The ordered probit model

Given the characteristic nature of enterprise survey data, the econometric analysis applies approaches of productivity analysis discussed in Escribano and Guasch (2005). In their study the authors evaluate the impacts of investment climate (*IC*) variables (infrastructure, bureaucracy, crime, finance, etc.) and other firms characteristic (*C*) variables on productivity measures using the following equations:

$$Y_i = F(L_i, K_i, M_i)P_i \quad (1)$$

$$P_i = G(IC_i, C_i)\exp(u_i) \quad (2)$$

where the index *i* denotes the *i*-th firm,  $Y_i$  denotes the output,  $L_i$  labor,  $K_i$  capital services,  $M_i$  materials/intermediate inputs,  $P_i$  productivity, and  $u_i$  the error term. The productivity (*P*) is referred to as the impacts of any variables different from production inputs (*L*, *K*, *M*), which influence the production/sales process.

The authors have developed some productivity measures based on rates of growth and variables in levels, and proposed certain estimation methodologies using parametric (one-step and two-step approaches) and nonparametric procedures. Out of the econometric models proposed in the paper, the following extended Cobb-Douglas-type production function<sup>8</sup> would be sufficient for our purpose.

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<sup>8</sup> This is a simplified expression of equation (34) without the time-index (*t*) and industry-index (*J*) in Escribano and Guasch (2005) (p. 31).

$$\log Y_i = \alpha_P + \alpha_L \log L_i + \alpha_K \log K_i + \alpha_M \log M_i + \sum_r \alpha_{IC,r} \log IC_{i,r} + \sum_r \alpha_{C,r} \log C_{i,r} + u_i \quad (3)$$

For the study purpose, the investment climate variables would be represented by measures of government facilitation, firm locations and type of customers. Unfortunately, the 2009 GIZ enterprise dataset<sup>9</sup> does not contain information on the firm's output level, capital services and intermediate inputs. Hence, the above equation cannot be estimated without modification. However, for individual sample firms the dataset contains information on business turnover, assets and liabilities, classified into five categories (ordinal variables). Therefore, an ordered probit model (or ordered logit model) would present the best possible estimation method for the research purpose.

Ordered probit models are widely applied for analysis of impact of determinants on certain variables of interest in various sectors and industries, such as the insurance industry (Ogurtsov et al., 2009); the health sector (Weiss, 1992); the education sector (Du Bois et al., 2009); the business sector (Wood, 2006); etc.

The standard ordered probit model for this analysis could be expressed as:

$$y_i^* = \beta_i' x_i + \varepsilon_i \quad (4)$$

where  $y_i^*$  is an unobservable variable,  $x_i$  is a vector of independent variables (including labor, characteristics of owners/manager; firms; and customers, and government facilitation),  $\beta_i'$  is an array of parameters to be estimated, and  $\varepsilon_i$  represents the random error which is assumed to follow a standard normal distribution, and the index  $i$  denotes the  $i$ -th firm. Instead of  $y_i^*$  we observe  $y$  classified into various categories with  $\delta_i (i = 1, \dots, 4)$  being the cut-off point, which divides firms' business turnover into five categories.

$$\begin{aligned} y &= 1 && \text{if } y^* \leq \delta_1 \\ y &= 2 && \text{if } \delta_1 < y^* \leq \delta_2 \\ &\dots && \dots \\ y &= 5 && \text{if } \delta_4 < y^* \end{aligned} \quad (5)$$

Equation (4) and the ordinal dependent variable (2008 business turnover) defined in Equation (5) are employed for the estimation of a standard ordered probit model in order to evaluate the impacts of relevant factors, which influence the business performance of SMEs.

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<sup>9</sup> Detailed data description is presented in Section 3.2.

### **3.2. Data and variables**

Data for the empirical analysis are extracted from the 2009 enterprise survey (ES2009) conducted by the GTZ in the Lao-German Programme on Human Resource Development for a Market Economy (GTZ HRDME). Hence, statistical data are of the year of 2008. It is the third survey in the so-called “Enterprise (Baseline) Survey” series.

The first enterprise survey, conducted in 2005 (ES2005), covered 390 enterprises in four major provinces in Laos, of which 21% were micro-enterprises<sup>10</sup> and 74% were SMEs. In the second survey conducted in 2007 (ES2007), one more province (Savannakhet Province) was added to expand the geographical coverage. This survey covered 490 enterprises (about 5.9% of the 8,290 registered enterprises in the country), of which 19% were micro-enterprises and 77% were SMEs. By the same token, the 2009 survey covers five provinces (Vientiane Capital, Luang Prabang, Luang Namtha, Champasack, and Savannakhet), which together have a population of 83,181 registered enterprises<sup>11</sup>. The Department of Statistics of the Ministry of Planning and Investment (MPI) was in charge of the sampling. The samples consist of a combination of a panel of enterprises covered under ES2005 and additional observations based on a random sampling. The ES2009 contains 728 samples covering 5.7% of all enterprises registered in Laos in 2008/2009. With respect to the size of enterprise, 145 firms (19.9%) are micro-enterprises with 1-2 full-time workers, 552 firms (75.8%) are SMEs with 20-99 full-time workers and 31 firms (4.3%) are large sized enterprises with 100 full-time workers or more. The field work was conducted within the month of August 2009 (5-28 August 2009) (GTZ, 2010).

From these initial data, 613 samples (84.2%) have been selected for the empirical analysis in this study. These are firms with 1-99 employees with complete information on variables of interest and at least one year of operation (firm age of one year). Since information on total assets and turnover is not available, the selection of small and medium enterprises, using the SME definition in the Decree No. 42/PM, is solely based on the number of employees hired by individual firms. The description of variables and the summary statistics of the samples are presented in Table 2.

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<sup>10</sup> In the reports of ES2006, ES2007 and ES2009, enterprises with 1-2 employees are defined as micro enterprises, 3-19 employees small, and 20-99 medium.

<sup>11</sup> The population for the survey refers to the total number of enterprises registered with the Tax Department in the targeted provinces.

Table 2: Description of variables and summary statistics of the samples

| Variable          | Definition/Description                                             | Mean  | SE    | Min   | Max   |
|-------------------|--------------------------------------------------------------------|-------|-------|-------|-------|
| <i>tlabor</i>     | Total number of paid and unpaid labor (including owner)            | 11.22 | 14.05 | 1.00  | 98.00 |
| <i>ownerage</i>   | Owner's age [years]                                                | 45.12 | 10.99 | 18.00 | 89.00 |
| <i>maleowner</i>  | Male owner (1 if true)                                             | 0.58  | 0.49  | 0.00  | 1.00  |
| <i>own_eduref</i> | Owner's education (no and primary edu.) ( <i>reference</i> )       | 0.20  | 0.40  | 0.00  | 1.00  |
| <i>own_lsec</i>   | Owner's education (lower secondary)                                | 0.15  | 0.36  | 0.00  | 1.00  |
| <i>own_hsec</i>   | Owner's education (upper secondary)                                | 0.22  | 0.42  | 0.00  | 1.00  |
| <i>own_votec</i>  | Owner's education (vocational and technical)                       | 0.11  | 0.31  | 0.00  | 1.00  |
| <i>own_higher</i> | Owner's education (higher education)                               | 0.31  | 0.46  | 0.00  | 1.00  |
| <i>buslaw</i>     | Know about any laws related to your business                       | 0.60  | 0.49  | 0.00  | 1.00  |
| <i>pc_use</i>     | Use of personal computer in business                               | 0.46  | 0.50  | 0.00  | 1.00  |
| <i>busmem</i>     | Membership in any business forum and organization                  | 0.31  | 0.46  | 0.00  | 1.00  |
| <i>invest08</i>   | Investment made in 2008                                            | 0.44  | 0.50  | 0.00  | 1.00  |
| <i>cgol08</i>     | Usefulness of assistance of central government in 2008             | 0.63  | 0.48  | 0.00  | 1.00  |
| <i>cgol06</i>     | Usefulness of assistance of central government in 2006             | 0.60  | 0.49  | 0.00  | 1.00  |
| <i>lgol08</i>     | Usefulness of assistance of local authorities in 2008              | 0.72  | 0.45  | 0.00  | 1.00  |
| <i>lgol06</i>     | Usefulness of assistance of local authorities in 2006              | 0.71  | 0.45  | 0.00  | 1.00  |
| <i>firmage</i>    | Years of operation (2008 – establishment year) [years]             | 8.74  | 6.15  | 1.00  | 38.00 |
| <i>indf</i>       | Individual proprietorship enterprise ( <i>reference</i> )          | 0.81  | 0.39  | 0.00  | 1.00  |
| <i>ltdf</i>       | Sole limited and limited enterprise                                | 0.13  | 0.33  | 0.00  | 1.00  |
| <i>soe</i>        | State-owned enterprise                                             | 0.03  | 0.18  | 0.00  | 1.00  |
| <i>mixf</i>       | Mixed, public, ordinary and limited partnership                    | 0.03  | 0.18  | 0.00  | 1.00  |
| <i>lao</i>        | Lao or domestic enterprise                                         | 0.95  | 0.23  | 0.00  | 1.00  |
| <i>jve</i>        | Joint venture (JV) enterprise                                      | 0.03  | 0.16  | 0.00  | 1.00  |
| <i>foe</i>        | Foreign owned enterprise (FOE) ( <i>reference</i> )                | 0.03  | 0.16  | 0.00  | 1.00  |
| <i>agri</i>       | Business belongs to agriculture (4digit-ISIC) ( <i>reference</i> ) | 0.02  | 0.13  | 0.00  | 1.00  |
| <i>foodbev</i>    | Business belongs to food and beverage (4digit-ISIC)                | 0.07  | 0.26  | 0.00  | 1.00  |
| <i>manuf</i>      | Business belongs to manufacturing (4digit-ISIC)                    | 0.09  | 0.29  | 0.00  | 1.00  |
| <i>constr</i>     | Business belongs to construction (4digit-ISIC)                     | 0.06  | 0.23  | 0.00  | 1.00  |
| <i>service</i>    | Business belongs to services (4digit-ISIC)                         | 0.34  | 0.47  | 0.00  | 1.00  |
| <i>commerce</i>   | Business belongs to commerce & trading (4digit-ISIC)               | 0.42  | 0.49  | 0.00  | 1.00  |
| <i>home</i>       | Location of enterprise at home ( <i>reference</i> )                | 0.51  | 0.50  | 0.00  | 1.00  |
| <i>mktroad</i>    | Location of enterprise at traditional market and road side         | 0.35  | 0.48  | 0.00  | 1.00  |
| <i>remloc</i>     | Location of enterprise other than the above two locations          | 0.14  | 0.34  | 0.00  | 1.00  |
| <i>vte</i>        | Firm location in Vientiane Capital ( <i>reference</i> )            | 0.23  | 0.42  | 0.00  | 1.00  |
| <i>lnt</i>        | Firm location in Luang Namtha Province                             | 0.10  | 0.31  | 0.00  | 1.00  |
| <i>lpb</i>        | Firm location in Luang Prabang Province                            | 0.20  | 0.40  | 0.00  | 1.00  |
| <i>svn</i>        | Firm location in Savannakhet Province                              | 0.23  | 0.42  | 0.00  | 1.00  |
| <i>chp</i>        | Firm location Champasack Province                                  | 0.23  | 0.42  | 0.00  | 1.00  |
| <i>cust_ind</i>   | Type of customers: individual customers ( <i>reference</i> )       | 0.66  | 0.47  | 0.00  | 1.00  |
| <i>cust_urb</i>   | Type of customers: urban merchants and businesses                  | 0.12  | 0.32  | 0.00  | 1.00  |
| <i>cust_rur</i>   | Type of customers: rural merchants and businesses                  | 0.02  | 0.13  | 0.00  | 1.00  |
| <i>cust_exp</i>   | Type of customers: exporters and customers abroad                  | 0.04  | 0.19  | 0.00  | 1.00  |
| <i>cust_oth</i>   | Type of customers: others (other than above)                       | 0.17  | 0.37  | 0.00  | 1.00  |

Source: Author's calculations from the data of ES2009.

Notes: 1. The dataset consists of 613 observations. 2. All variables without unit of measurement are binary (dummy) variables, which are defined 1 if true and 0 otherwise.

At the first glance, the short history of SME development of the country is quite clearly reflected, as the average firm age is below 9 years. The average age of entrepreneurs in Laos is relatively high (45 years old). In addition, SMEs in Laos tends to be small, as a

representative SME would hire 11 employees including the owner, who often manages the enterprise (Table 2).

In terms of firm characteristics, individual proprietorship enterprises dominate the SME sector with nearly 81% share in number, followed by sole limited and limited enterprises with 13%, while state owned enterprises comprise 3%. Domestic firms are the majority (95%) of SMEs operating in the economy, whereas foreign owned enterprises and joint ventures share 3% each. With a share of about 76% of the samples, enterprises providing services and doing trade constitute the largest portion of the samples.

With respect to owner's characteristics, most of the entrepreneurs have relatively high education<sup>12</sup>: secondary education 37%, higher education 31%, followed by primary education 17% and vocational and technical education 11%. It is deemed that partly owing to this favorable educational background, nearly 60% of business owners are familiar with or have knowledge about laws and regulations related to their businesses and nearly half of them are using personal computers for business purposes. About 60-70% of the owners believe that the business facilitation of the government, both at the central and provincial levels, is helpful.

Observing the location of the enterprises reveals that as many as 86% of SMEs are located either at home or on the road side. This is a reasonable aspect, because most of the SMEs covered in the survey are involved in trade business or provide some types of services. Hence, many of such shops are just set up at home or along the road side as family business. In addition, the sampling is rather balanced with all the provinces having a quite equitable share, except for the more remote province in the samples (Luang Namtha). Finally, reflecting the scope of SME businesses, approximately 77% of their customers are individual buyers and urban merchants and businesses.

Turning to business performance in 2008, 390 (64%) out of 613 firms had a business turnover of less than U\$23,000 and 13% of the samples could made between U\$23,000 and U\$46,000, while a some large SMEs earned more than U\$114,000 (Table 3). This data on business turnover as defined in equation (5) represents a measure of firm performance and is used as the dependent variable in the regression.

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<sup>12</sup> According to the latest publication of UNESCO (2011), the current education system consists of the following elements: nursery and kindergarten (3 years); primary education (5 years); lower secondary (4 years); upper secondary (3 years)/vocational training/technical education (3 years); higher diploma (3 years)/university (5-7 years)/professional and technical programs (3-5 years); Mater program (2 years); and Doctoral program (minimum 3 years). However, up to academic year 2008-09, the lower secondary level only had 3 years. A brief description of this former Lao education system, which is more appropriate for this study, is also available in Onphanhdala and Suruga (2007).

Table 3: Business turnover of SMEs in 2008

| Scale | Turnover of 2008                                 | # of enterprise | % share |
|-------|--------------------------------------------------|-----------------|---------|
| 1     | Less than 200 million LAK (<U\$23,000)           | 390             | 63.62   |
| 2     | Between 201-400 million LAK (U\$23,000-46,000)   | 78              | 12.72   |
| 3     | Between 401-700 million LAK (U\$46,000-80,000)   | 40              | 6.53    |
| 4     | Between 701-1000 million LAK (U\$80,000-114,000) | 22              | 3.59    |
| 5     | More than 1000 million LAK (>U\$114,000)         | 83              | 13.54   |
| Total |                                                  | 613             | 100.00  |

Source: Author compiled from the data of ES2009..

Note: LAK is the currency of Laos. The 2008 official exchange rate is 8,744LAK=U\$1.00 (Key Indicators 2011, Asian Development Bank).

Additional indicators of business development available in the dataset include trends of output, business turnover, profit and labor of 2008 as compared to the previous year. Roughly two-thirds of SMEs in Laos have maintained the business level of 2007 or achieved a positive development in their businesses. With respect to labor, as many as nine out of ten SMEs increased employment in 2008 as compared to 2007 (Table 4).

Table 4: Business trends of SMEs in 2008 (number of enterprises, % share)

| Trends of business           | Output     | Turnover   | Profit     | Labor      |
|------------------------------|------------|------------|------------|------------|
| Decreased (compared to 2007) | 202 (32.9) | 205 (33.4) | 209 (34.1) | 59 (9.6)   |
| Unchanged (compared to 2007) | 132 (21.5) | 127 (20.7) | 137 (22.4) | 447 (72.9) |
| Increased (compared to 2007) | 279 (45.5) | 281 (45.8) | 267 (43.6) | 107 (17.5) |

Source: Author compiled from the data of ES2009..

Note: Number in parenthesis is the percentage share in total.

#### 4. Empirical Results and Discussions

In view of ensuring consistency of the empirical results, equation (4) is estimated using the ordered probit model and ordered logit model. The major difference between the two estimation methods lies in the assumption of the cumulative density function. Since the two models yield very consistent results, the following presentations and discussions refer to the estimates from the ordered probit model.

The determinants of firm performance are grouped into four categories, which describe (1) entrepreneur's human and social capital; (2) government policies (facilitation programs); (3) firm characteristics (age and type of firms, location – both intra-provincial and inter-provincial), and (4) characteristics of customers. The results are summarized in Table 5.

Table 5: Factors influencing performance (turnover) of SMEs

| Variable          | Description                                  | Ordered Probit Model |       |       | Ordered Logit Model |       |       |
|-------------------|----------------------------------------------|----------------------|-------|-------|---------------------|-------|-------|
|                   |                                              | Coefficient          | SE    | P> z  | Coefficient         | SE    | P> z  |
| <i>Intlabor</i>   | <i>labor (natural logarithm)</i>             | 0.516***             | 0.076 | 0.000 | 0.941***            | 0.140 | 0.000 |
| <i>maleowner</i>  | <i>male owner</i>                            | 0.059                | 0.127 | 0.642 | 0.109               | 0.222 | 0.624 |
| <i>lnownerage</i> | <i>owner's age (natural logarithm)</i>       | 0.624**              | 0.253 | 0.014 | 0.900**             | 0.434 | 0.038 |
| <i>own_lsec</i>   | <i>owner lower secondary education</i>       | 0.407*               | 0.230 | 0.076 | 0.763*              | 0.415 | 0.066 |
| <i>own_hsec</i>   | <i>owner upper secondary education</i>       | 0.152                | 0.216 | 0.483 | 0.250               | 0.397 | 0.528 |
| <i>own_votec</i>  | <i>owner vocational &amp; technical edu.</i> | 0.656***             | 0.236 | 0.005 | 1.099**             | 0.427 | 0.010 |
| <i>own_higher</i> | <i>owner higher edu and post-graduate</i>    | 0.382*               | 0.212 | 0.071 | 0.660*              | 0.380 | 0.082 |
| <i>buslaw</i>     | <i>knowledge on laws related to bus.</i>     | 0.368***             | 0.136 | 0.007 | 0.750***            | 0.247 | 0.002 |
| <i>pc_use</i>     | <i>use of personal computer in business</i>  | 0.233*               | 0.125 | 0.063 | 0.367*              | 0.220 | 0.096 |
| <i>busmem</i>     | <i>membership in business association</i>    | 0.476***             | 0.149 | 0.001 | 0.743***            | 0.258 | 0.004 |
| <i>invest08</i>   | <i>investment in 2008</i>                    | -0.044               | 0.120 | 0.713 | -0.022              | 0.208 | 0.915 |
| <i>cgol08</i>     | <i>facilitation of central GOL 2008</i>      | -0.177               | 0.253 | 0.484 | -0.411              | 0.454 | 0.366 |
| <i>cgol06</i>     | <i>facilitation of central GOL 2006</i>      | 0.173                | 0.246 | 0.481 | 0.420               | 0.444 | 0.344 |
| <i>lgol08</i>     | <i>facilitation of local GOL 2008</i>        | 0.369                | 0.407 | 0.365 | 0.681               | 0.664 | 0.305 |
| <i>lgol06</i>     | <i>facilitation of local GOL 2006</i>        | -0.345               | 0.405 | 0.394 | -0.673              | 0.664 | 0.311 |
| <i>ltdf</i>       | <i>limited enterprise</i>                    | 0.402**              | 0.163 | 0.013 | 0.748***            | 0.284 | 0.008 |
| <i>soe</i>        | <i>state-owned enterprises</i>               | 0.445                | 0.292 | 0.127 | 0.790               | 0.492 | 0.108 |
| <i>mixf</i>       | <i>mixed enterprise</i>                      | 0.087                | 0.342 | 0.800 | 0.252               | 0.582 | 0.666 |
| <i>lao</i>        | <i>Lao or domestic firm</i>                  | -0.561*              | 0.317 | 0.077 | -0.964*             | 0.536 | 0.072 |
| <i>jve</i>        | <i>joint venture firm</i>                    | -0.424               | 0.424 | 0.317 | -0.853              | 0.719 | 0.235 |
| <i>foodbev</i>    | <i>food and beverage</i>                     | -1.109**             | 0.442 | 0.012 | -2.053***           | 0.773 | 0.008 |
| <i>manuf</i>      | <i>manufacturing</i>                         | -0.937**             | 0.413 | 0.023 | -1.892**            | 0.732 | 0.010 |
| <i>constr</i>     | <i>construction</i>                          | -0.144               | 0.443 | 0.746 | -0.470              | 0.781 | 0.547 |
| <i>service</i>    | <i>service</i>                               | -1.218***            | 0.396 | 0.002 | -2.254***           | 0.703 | 0.001 |
| <i>commerce</i>   | <i>commerce</i>                              | -0.915**             | 0.393 | 0.020 | -1.782**            | 0.699 | 0.011 |
| <i>mktroad</i>    | <i>market &amp; road side</i>                | 0.097                | 0.135 | 0.473 | 0.222               | 0.236 | 0.348 |
| <i>remloc</i>     | <i>remaining locations</i>                   | 0.106                | 0.171 | 0.536 | 0.252               | 0.289 | 0.384 |
| <i>lnt</i>        | <i>Luang Namtha Province</i>                 | 0.154                | 0.273 | 0.572 | 0.313               | 0.483 | 0.517 |
| <i>lpb</i>        | <i>Luang Prabang Province</i>                | 0.004                | 0.184 | 0.983 | 0.011               | 0.317 | 0.973 |
| <i>svn</i>        | <i>Savannakhet Province</i>                  | 0.165                | 0.172 | 0.338 | 0.292               | 0.300 | 0.330 |
| <i>chp</i>        | <i>Champasack Province</i>                   | 0.365**              | 0.168 | 0.029 | 0.558*              | 0.291 | 0.055 |
| <i>cust_urb</i>   | <i>urban merchants and businesses</i>        | 0.238                | 0.175 | 0.174 | 0.492               | 0.305 | 0.107 |
| <i>cust_rur</i>   | <i>rural merchants and businesses</i>        | -0.834               | 0.566 | 0.140 | -1.388              | 1.015 | 0.172 |
| <i>cust_exp</i>   | <i>exporters and direct export</i>           | 0.174                | 0.288 | 0.547 | 0.327               | 0.499 | 0.512 |
| <i>cust_oth</i>   | <i>other customers</i>                       | -0.105               | 0.159 | 0.508 | -0.222              | 0.276 | 0.421 |
| Observation       |                                              | 613                  |       |       | 613                 |       |       |
| Log likelihood    |                                              | -507.063             |       |       | -506.240            |       |       |
| Pseudo-R2         |                                              | 0.260                |       |       | 0.262               |       |       |

Source: Author's calculations.

Note: The asterisks \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

#### 4.1. Entrepreneur's ability

It is plausible to observe that labor input has a direct impact on business turnover because manpower is the major input of production. Most of SMEs in Laos use traditional techniques for production in agriculture, manufacturing, and construction, which require a

large amount of manpower as a matter of course. Similarly, the service industry and trade require are relatively labor-demanding.

Entrepreneurial human capital is understood to contain educational levels (primary, lower secondary; upper secondary; vocational and technical; higher and post-graduate; and no-education), experience (indicated by owner's age), ability to use modern tools for business planning and operation, knowledge on laws related to business, and decision on investment. Membership in business organization can be considered as social capital. The gender of the owner is also controlled for in the analysis.

For all four educational levels the coefficient has a positive sign implying that entrepreneur's education would improve business turnover, but the significance of the estimates varies among the levels. This result is robust and consistent regardless of the regression models and procedures (see also Table A1). Overall, the contribution of education to firm performance<sup>13</sup> is consistent with the findings in previous studies for developing countries, such as Pakistan (Kurosaki and Khan, 2004), Lao (Onphanhdala and Suruga, 2010a), and Vietnam (Santarelli and Tran, 2013; Vixathap, 2013).

The differences in significance levels reveal some interesting issues and deserve further discussion. Entrepreneurs appear to capitalize on lower secondary education, vocational and technical training and higher/graduate study, but upper secondary education appear to be less important for business operation. First, the coefficient for '*own\_lsec*' is significant implying that lower secondary education is very likely to contribute to increasing firm's turnover. Second, the absence of impact of upper secondary education ('*own\_hsec*') could suggest that the curriculum is not relevant to SME business operations. Third, vocational and technical training and higher and post-graduate education ('*own\_votec*', '*own\_higher*') is likely to improve firm turnover. Indeed, many of the business colleges in Laos are private institutions and have developed a curriculum that would better reflect the needs of businesses. Absence of impact of education on firm performance is not uncommon for developing (transitional) economies. Considering this aspect, the present study extends the analysis of entrepreneur's human capital (education, experience) and business performance of MSEs in Laos (Onphanhdala and Suruga, 2010a) and Vietnam (Vixathap, 2013).

The significant contribution of modern ICT equipment in business planning and management would lend further support to the relevance of vocational/technical training and

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<sup>13</sup> In this paper, the terms business turnover, firm performance, enterprise performance and business performance are understood to measure the success of an enterprise and are used interchangeably.

higher education. Apparently, the use of ICT for business operation, such as using a personal computer for producing own advertisement; conducting market research; and maintaining customer relations, would improve firm performance. Moreover, entrepreneur's experience (represented by owner's age) and knowledge on legal aspects of business would contribute in one or other way to operating the business. On the other hand, investment in 2008 does not appear to help the business in the same year. This might be explained by the fact that investment would need some time to have any effect. Thus, lagged investment (investment of 2006 or 2007) might show some impact on firm turnover of 2008, had the survey include a question on this issue.

Finally, it is a positive development in Laos that membership in business associations can improve firm performance. It is widely known that the purpose of forming a business organization is, among other things, to protect the interest of the members, share business information and exchange ideas, etc. The analysis reveals that such activities in Lao businesses are fruitful for the member SMEs. Currently, there are about 25 official professional business associations led by the Lao Chamber of Commerce and Industry (LNCCI), which support the members by means of sharing information, providing assistance in negotiations, and issuing certificates and licenses for export (Southiseng and Walsh, 2010). On the gender aspect, male-headed for female-headed businesses do not have any differences in performance, because business successes would rather depend on one's capability and entrepreneurship.

#### ***4.2. Government policy***

In this analysis, government policy is understood as facilitation of the central government and local authorities for businesses in 2006 and 2008. The evaluation of government policy is based on the perception of entrepreneurs toward the services of the public agencies in charge of the SME facilitation programs. The insignificant coefficients – in some cases with a controversial (negative) sign – imply that the SME facilitation at both central and local/provincial levels does not appear to bring about any satisfactory result for entrepreneurs. This is a very important issue to be addressed because the SME promotion policies can be sound and good, but they would not yield satisfactory results unless the implementation is serious and appropriate.

Since the mid-1990s, the GOL has encouraged private sector development and provided legal support to SMEs through various laws and decrees. These legal documents

confirm the commitment and outline the goals of the GOL toward PSD, such as improving the regulatory environment; enhancing enterprise's competitiveness; expanding access to domestic and external markets; improving access to finance; enhancing entrepreneurial attitudes; and the like (Kyophilavong, 2007). The proxies for policy evaluation are of subjective and qualitative nature. They do not measure the appropriateness of the SME policies of the GOL, but simply indicate how business owners/managers perceive and realize the services provided by the agencies concerned within the framework of the SME policies. Considering these aspects of the policy variable, the result would lend strong support to the findings in previous studies (Kyophilavong, 2007; Onphanhdala and Suruga, 2010; Souksavath et al., 2012) that appropriate policy implementations and specific support programs are inevitable to achieve the goals and targets of the GOL in SME promotion.

#### **4.3. Enterprise characteristics and location**

In this paper enterprise characteristics include types of enterprises (limited, state-owned; mixed type; and individual proprietorship enterprises); firm ownership (Lao, Joint Venture, and foreign-owned enterprises (FOEs)); and types or sectors of business (food and beverage, manufacturing, construction, services, commerce, and agriculture). The classification of business sectors are based on 4-digit ISIC<sup>14</sup> code. First, compared to individual businesses, limited enterprises tend to have achieved higher turnover, while SOEs and mixed-type firms seem to be comparable. This result could refer to the nature of the liability of limited enterprises that would make the owners more concerned with profit maximization. Second, it is plausible that FOEs, which often possess superior production technologies; knowhow; managerial and other skills, outperform domestic firms (Vixathep and Matsunaga, 2012). Third, among the six business classifications under the study, firms belonging to agricultural production appear to have achieved the higher turnover. This somewhat surprised result could be attributed to the lack of capital in the econometric analysis. By nature firms in manufacturing and construction industries and other non-agricultural sectors would need more capital for production. The absence of a proxy for capital service in the regression equation (equation (4)) would overestimate the performance of enterprises in agriculture.

Firm locations are understood at two levels: intra-provincial locations include locations of the business at home, a market or road side and other locations, while inter-

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<sup>14</sup> ISIC stands for the International Standard Industrial Classification of the United Nations.

provincial locations are the five provinces covered under the survey (Luang Namtha Province, Luang Prabang, Savannakhet, and Champasack, and Vientiane Capital). The analysis reveals that intra-provincial and inter-provincial firm locations are indifferent in terms of business turnover. The only exception is Champasack Province which is associated with superior performance, even compared to firms in Vientiane Capital. This result appears to be controversial and might have some complex causes, including statistical errors, and might need further in-depth research to clarify the reasons. However, such an analysis is not possible with currently available data and is beyond the scope of this paper.

#### ***4.4. Characteristics of customers***

Customers are categorized into five groups: individual customers; urban merchants and businesses; rural merchants and businesses; exporters and customers abroad; and customers other than above. The analysis reveals that customer's characteristics are indifferent to business performance of SMEs. In fact, the samples consist of enterprises belonging to six different sectors. Therefore, by nature their products would target different customer groups and satisfy the requirement of different kinds of customers. This fact might a plausible cause of the insignificance of the location coefficients. Notwithstanding this fact, to our knowledge there are no published studies on impact of customer characteristics on firm performance for Laos. Hence, a direct comparison of this result is not possible at the current stage.

### **5. Concluding Remarks**

The Lao economy is characterized by the dominance of small and medium enterprises in the non-agricultural sectors. SMEs have played a significant role in industrial development and employment generation for the country, in particular, upon the adoption of the transition policy in the late 1980s. With the transition on the way, the private sector and SMEs have gradually gained more political recognition and policy support from the GOL over the last decade. Entrepreneurship development and SME promotion have become one of the priorities of the government's private sector development. Notwithstanding the crucial role of SMEs in the Lao economy, studies on entrepreneurship and SME development are very limited, particularly quantitative assessments of impact of entrepreneurial capabilities and government policies on business successes. This study addresses the performance of entrepreneurs and

government facilitation in the recent economic context (firm's turnover) using data from a recent enterprise survey.

The study has revealed some important findings. First, it ascertains the positive relationship between entrepreneur's human and social capital and business success in Laos, and thereby emphasizing the importance of human resource development (HRD) in economic development. Formal education – at all levels, specific training and experiences have proven essential for entrepreneurs of small and medium sized start-ups. In addition, knowledge about modern tools and legal environment of the business are relevant for business successes. The benefits of human and social capital have outweighed the gender differences. Second, appropriate implementations of SME policies and tailor-made facilitation programs are indispensable to make government policies effective. In this regard, detailed knowledge on the policies and commitment of public officials and agencies in charge of SME promotion are crucial for achieving policy targets of the GOL. Third, private limited ownership and foreign-owned enterprises are pertinent to success of SMEs. Hence, in PSD more attention should be paid on ownership form and increased efforts should be made to attract well-performing foreign-owned enterprises.

The findings highlight the importance of entrepreneurship development and policy implementation in business promotion. To promote the development of the private sector, assessment of the quality and appropriateness of education deserves more consideration in the policy formulation for HRD and PSD. Equally important is the need for a systematic monitoring and evaluation of policy implementation, if the policy targets of the GOL are to be attained.

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## Appendix

Table A1: Factors influencing performance of SMEs (including size dummies)

| Variable          | Description                                  | Ordered Probit Model |       |       | Ordered Logit Model |       |       |
|-------------------|----------------------------------------------|----------------------|-------|-------|---------------------|-------|-------|
|                   |                                              | Coefficient          | SE    | P> z  | Coefficient         | SE    | P> z  |
| <i>Intlabor</i>   | <i>labor (natural logarithm)</i>             | 0.438***             | 0.143 | 0.002 | 0.892***            | 0.274 | 0.001 |
| <i>maleowner</i>  | <i>male owner</i>                            | 0.063                | 0.127 | 0.618 | 0.110               | 0.222 | 0.620 |
| <i>lnownerage</i> | <i>owner's age (natural logarithm)</i>       | 0.633**              | 0.253 | 0.012 | 0.901**             | 0.433 | 0.037 |
| <i>own_lsec</i>   | <i>owner lower secondary education</i>       | 0.404*               | 0.230 | 0.079 | 0.762***            | 0.417 | 0.067 |
| <i>own_hsec</i>   | <i>owner upper secondary education</i>       | 0.162                | 0.217 | 0.455 | 0.257               | 0.399 | 0.519 |
| <i>own_votec</i>  | <i>owner vocational &amp; technical edu.</i> | 0.661***             | 0.236 | 0.005 | 1.099**             | 0.430 | 0.011 |
| <i>own_higher</i> | <i>owner higher edu and post-graduate</i>    | 0.397*               | 0.212 | 0.061 | 0.676**             | 0.382 | 0.076 |
| <i>buslaw</i>     | <i>knowledge on laws related to bus.</i>     | 0.363***             | 0.136 | 0.008 | 0.746***            | 0.248 | 0.003 |
| <i>pc_use</i>     | <i>use of personal computer in business</i>  | 0.472***             | 0.149 | 0.002 | 0.740***            | 0.259 | 0.004 |
| <i>busmem</i>     | <i>membership in business association</i>    | 0.233*               | 0.125 | 0.063 | 0.371*              | 0.221 | 0.092 |
| <i>invest08</i>   | <i>investment in 2008</i>                    | -0.052               | 0.121 | 0.665 | -0.038              | 0.209 | 0.857 |
| <i>cgol08</i>     | <i>facilitation of central GOL 2008</i>      | -0.147               | 0.256 | 0.566 | -0.375              | 0.458 | 0.412 |
| <i>cgol06</i>     | <i>facilitation of central GOL 2006</i>      | 0.158                | 0.247 | 0.521 | 0.399               | 0.445 | 0.370 |
| <i>lgol08</i>     | <i>facilitation of local GOL 2008</i>        | 0.343                | 0.407 | 0.400 | 0.662               | 0.668 | 0.322 |
| <i>lgol06</i>     | <i>facilitation of local GOL 2006</i>        | -0.321               | 0.405 | 0.428 | -0.641              | 0.668 | 0.337 |
| <i>ltdf</i>       | <i>limited enterprise</i>                    | 0.394**              | 0.163 | 0.016 | 0.743***            | 0.286 | 0.009 |
| <i>soe</i>        | <i>state-owned enterprise</i>                | 0.439                | 0.292 | 0.133 | 0.788               | 0.491 | 0.109 |
| <i>mixf</i>       | <i>mixed enterprise</i>                      | 0.055                | 0.345 | 0.873 | 0.208               | 0.590 | 0.724 |
| <i>lao</i>        | <i>Lao or domestic firm</i>                  | -0.586*              | 0.318 | 0.066 | -0.997*             | 0.535 | 0.063 |
| <i>jve</i>        | <i>joint venture firm</i>                    | -0.415               | 0.426 | 0.329 | -0.843              | 0.720 | 0.242 |
| <i>foodbev</i>    | <i>food and beverage</i>                     | -1.125**             | 0.444 | 0.011 | -2.087***           | 0.779 | 0.007 |
| <i>manuf</i>      | <i>manufacturing</i>                         | -0.947**             | 0.414 | 0.022 | -1.898**            | 0.738 | 0.010 |
| <i>constr</i>     | <i>construction</i>                          | -0.154               | 0.445 | 0.729 | -0.462              | 0.788 | 0.558 |
| <i>service</i>    | <i>Service</i>                               | -1.220***            | 0.397 | 0.002 | -2.256***           | 0.709 | 0.001 |
| <i>commerce</i>   | <i>Commerce</i>                              | -0.914**             | 0.394 | 0.020 | -1.770**            | 0.704 | 0.012 |
| <i>fs19</i>       | <i>firm size (10-19 workers)</i>             | 0.104                | 0.204 | 0.609 | 0.036               | 0.364 | 0.922 |
| <i>fs49</i>       | <i>firm size (20-49 workers)</i>             | 0.260                | 0.293 | 0.375 | 0.257               | 0.527 | 0.625 |
| <i>fs99</i>       | <i>firm size (50-99 workers)</i>             | 0.078                | 0.451 | 0.862 | -0.197              | 0.807 | 0.807 |
| <i>mktroad</i>    | <i>market &amp; road side</i>                | 0.095                | 0.136 | 0.484 | 0.223               | 0.238 | 0.349 |
| <i>remloc</i>     | <i>remaining locations</i>                   | 0.113                | 0.171 | 0.509 | 0.265               | 0.290 | 0.361 |
| <i>lnt</i>        | <i>Luang Namtha Province</i>                 | 0.148                | 0.272 | 0.585 | 0.299               | 0.485 | 0.537 |
| <i>lpb</i>        | <i>Luang Prabang Province</i>                | -0.004               | 0.185 | 0.982 | -0.011              | 0.320 | 0.974 |
| <i>svn</i>        | <i>Savannakhet Province</i>                  | 0.161                | 0.173 | 0.351 | 0.272               | 0.301 | 0.367 |
| <i>chp</i>        | <i>Champasack Province</i>                   | 0.365**              | 0.168 | 0.030 | 0.550*              | 0.290 | 0.058 |
| <i>cust_urb</i>   | <i>urban merchants and businesses</i>        | 0.256                | 0.176 | 0.146 | 0.518               | 0.307 | 0.092 |
| <i>cust_rur</i>   | <i>rural merchants and businesses</i>        | -0.845               | 0.567 | 0.136 | -1.397              | 1.010 | 0.167 |
| <i>cust_exp</i>   | <i>exporters and direct export</i>           | 0.141                | 0.293 | 0.631 | 0.275               | 0.507 | 0.587 |
| <i>cust_oth</i>   | <i>other customers</i>                       | -0.108               | 0.160 | 0.500 | -0.228              | 0.276 | 0.408 |
| Observation       |                                              | 613                  |       |       | 613                 |       |       |
| Log likelihood    |                                              | -506.444             |       |       | -505.676            |       |       |
| Pseudo-R2         |                                              | 0.261                |       |       | 0.262               |       |       |

Source: Author's calculations.

Notes: 1. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively. 2. The analysis result is also consistent in the case, in which the dummies for government facilitation are used separately for 2006 and 2008.